भारतीय मानक
Indian Standard

IS 13243 : 2014
(Reaffirmed 2019)

स्वचल वाहन — व्यवसायिक वाहन — पहियों के लिए हब अनुलग्नक — आयाम

(पहला पुनरीक्षण)

Automotive Vehicles — Commercial Vehicles — Attachments on Hubs for Wheels — Dimensions

(First Revision)

ICS 43.040.50

© BIS 2014

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली–110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.org.in www.standardsbis.in

January 2014 **Price Group 2**

Automotive Tyres, Tubes and Rims Sectional Committee, TED 7

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Automotive Tyres, Tubes and Rims Sectional Committee had been approved by the Transport Engineering Divison Council.

This standard was first published in 1991. This revision has been undertaken to align this standard with the latest international standard. In the formulation of this standard, considerable assistance has been derived from ISO 4107 : 2010 'Commercial vehicles — Wheel-hub attachment dimensions', issued by the International Organization for Standardization (ISO).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

AUTOMOTIVE VEHICLES — COMMERCIAL VEHICLES — ATTACHMENTS ON HUBS FOR WHEELS — DIMENSIONS

(First Revision)

1 SCOPE

This standard covers the dimensional characteristics necessary for the attachment of the wheel on the hub for commercial vehicles.

2 FIELD OF APPLICATION

The dimensions indicated apply to wheel attachments for commercial vehicles whose fixing includes 5, 6, 8 and 10 stud holes.

3 DIMENSIONS

3.1 The dimensions of the wheel and hub having flat attachment with centering on central bore shall be as given in Table 1. This clause considers the flat attachment type with centering on central bore which is the recommended type for future equipment and other types are currently in use. The specifications do not imply that the wheel is interchangeable from one vehicle to another.

3.2 The dimensions of the wheel and hub having attachments with spherical or conical centering on the stud hole shall be as given in Table 2.

3.3 For dual mounted wheels (wheels fitted back to back), the vertical outside face of disc up to diameter D_4 to be flat to 0.5 mm concave and vertical inside face of disc up to diameter D_4 to be flat to 0.5 mm convex.

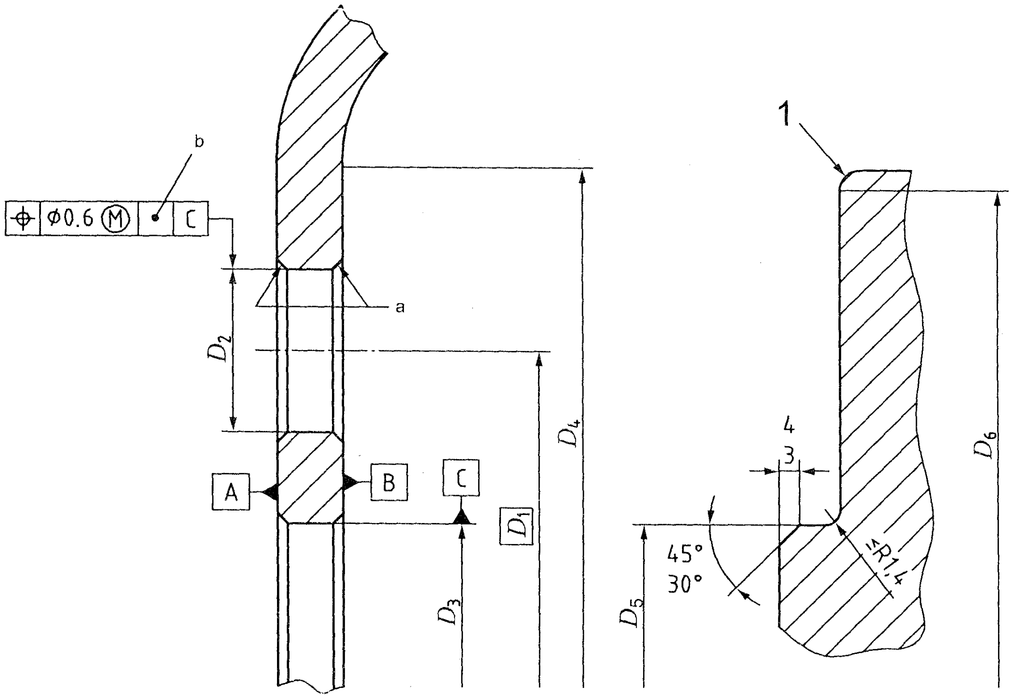
For single fitment of wheels, the vertical outside face of disc up to diameter D_4 is to be flat to 0.5 mm convex and vertical inside face of disc up to diameter D_4 is to be flat to 0.5 mm concave.

NOTE — Outside face is the side of wheel on view to observer when wheel is mounted as singles.

Table 1 Dimensions of Flat Attachments with Centering on Cylindrical Bore

(*Clause* 3.1)

All dimensions in millimetres.



Wheel **Wheel - Support**

Key

1 — Sharp edge broken by radius or chamfer.

a) Break sharp edge.

b) *A* or *B*.

NOTE — The wheel support is shown on the right for information.

Sl No.	No. of Studs	Bolt Circle Diameter D_1	Bolt Hole Diameter D_2	Central Bore Diameter[1] $D_3{}^{+0.2}_{-3.0}$		Disc Flat Diameter D_4 *Min*	Stud[2]	Wheel Support[2]	
				Ferrous	Aluminium			$D_5{}^{0}_{-0.2}$	$D_6{}^{+1}_{-0}$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
i)	6	205	21	161	161.2	255	18	160.8	250
		245		202	202.2	295		201.8	290
ii)	8	222.25	24	164	164.2	280	20	163.8	277
		275[3]		221	221.1	325		220.8	320
				219[4]	219.2			218.7[4]	
iii)	10	285.75	26	220	220.1	345	22	219.8	340
		335		281	281.2	390		280.8	385
				279[4]	279.2			278.7[4]	

[1] Continuous centre bore chamfer 1.5 × 45° at least on contact side or on both sides.

[2] For information.

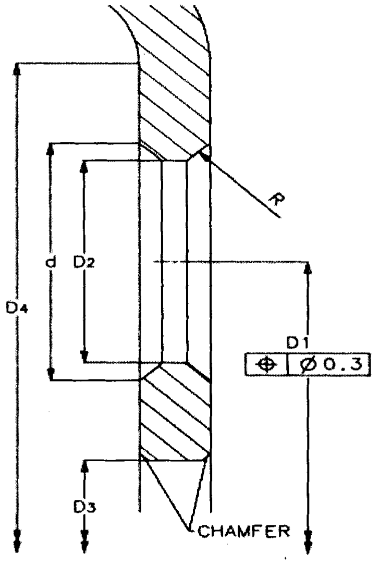
[3] Optional construction: D_2 = 26 mm with 22 mm stud.

[4] These sizes are also permissible till the industry changes over to the preferred dimensions as given in the table.

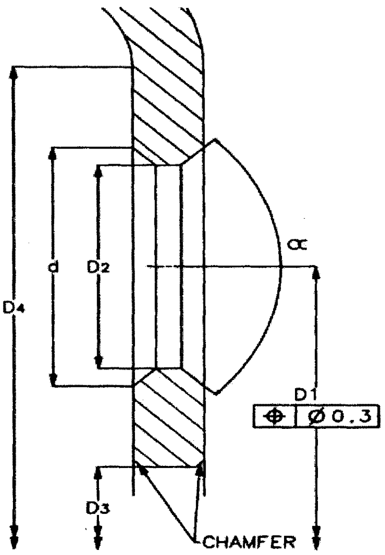
Table 2 Dimensions of Attachment with Spherical or Conical Centering on the Stud Hole

(*Clause* 3.2)

All dimensions in millimetres.



Wheel with Spherical Countersink of the Hole



Wheel with Conical Countersink of the Hole

Key

D_1 — pitch circle diameter of the stud or nut seating.

D_2 — diameter of the stud hole.

D_3 — diameter of the central bore.

D_4 — diameter of the disc flat.

α — angle of the countersink of the hole.

R — radius of the countersink of the hole.

d — diameter of the countersink of the hole.

Sl No.	No. of Studs	Pitch Circle Diameter of the Stud/Nut Seating D_1	Diameter of the Stud Hole $D_2 + 0.8$	Diameter of the Counter-sink of the Hole $d^{+0.5}_{0}$	Radius of the Counter-sink of the Hole $R \pm 0.1$	Angle of the Countersink of the Hole $\alpha° \pm 1°$	Diameter of the Central Bore D_3, *Min*	Diameter of the Disc Flat D_4, *Min*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	5	174.63	32.5	37	22	—	126.2	245
		203.2	29	34	22	—	146	255
		203.2	32.5	37	22	—	133	255
		208	32.5	37	22	—	150	255
ii)	6	170	21.8	26.7	16	—	130	223
		170	21.8	26.7	—	80	130	223
		184.15	16.7	21.3	—	90	144.5	230
		205	21.5	27	16	—	161	255
		205	21.8	26.7	16	—	161	255
		205	25	31.0	—	80	161	255
		222.25	32.5	37	22	—	164.3	290
iii)	8	165	17	32	—	90	116	212
		275	21.8	26.7	16	—	221	325
		275	27	32	18	—	221	320
		275	25	31	—	80	221	325
		285	32.5	38	22	—	221	350
iv)	10	222.2	30.5	37.1	22.2	—	165	290
		225	27	32	18	—	176	270
		285.75	27	32	18	—	221	335
		285.75	32.5	37	22	—	221	345
		335	21.8	26.7	16	—	281	390
		335	25	31	—	80	281	390
		335	27	32	18	—	281	380
		335	37	46.2	30.2	—	271.5	402

NOTES

1 Stud and/or nut seating (spherical or conical countersink) centers to be within 0.3 mm diameter of true position.

2 Countersink either both sides of the disc for dual or single fitment or one side only for single fitment.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc No.: TED 07(0856).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.org.in

Regional Offices:		*Telephones*
Central :	Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	2323 7617 2323 3841
Eastern :	1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700054	2337 8499, 2337 8561 2337 8626, 2337 9120
Northern :	SCO 335-336, Sector 34-A, CHANDIGARH 160022	260 3843 260 9285
Southern :	C.I.T. Campus, IV Cross Road, CHENNAI 600113	2254 1216, 2254 1442 2254 2519, 2254 2315
Western :	Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	2832 9295, 2832 7858 2832 7891, 2832 7892

Branches: AHMEDABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. DEHRADUN. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. KOCHI. LUCKNOW. NAGPUR. PARWANOO. PATNA. PUNE. RAJKOT. VISAKHAPATNAM.

Published by BIS, New Delhi